



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-1174; Project Identifier MCAI-2019-00135-E]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce Deutschland Ltd & Co KG (Type Certificate Previously Held by Rolls-Royce Deutschland GmbH, formerly BMW Rolls-Royce GmbH) Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain Rolls-Royce Deutschland Ltd & Co KG (RRD) BR700-710A1-10, BR700-710A2-20 and BR700-710C4-11 model turbofan engines. This proposed AD was prompted by an investigation by RRD, which revealed a quality escape during the high-pressure turbine (HPT) stage 1 disk rim cooling air hole manufacturing process. This proposed AD would require removing affected HPT disks from service prior to reaching specified compliance times or at the next engine shop visit, whichever occurs first. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: (202) 493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Rolls-Royce Deutschland Ltd & Co KG, Eschenweg 11, Dahlewitz 15827, Germany; phone: +49 0 33 7086 1200; email: rrd.techhelp@rolls-royce.com. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1174; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Wego Wang, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington MA 01803; phone: (781) 238-7134; fax: (781) 238-7199; email: wego.wang@faa.gov.

SUPPLEMENTARY INFORMATION

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2020-1174; Project Identifier MCAI-2019-00135-E” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all

comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Wego Wang, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2019-0299, dated December 10, 2019 (referred to after this as “the MCAI”), to address the unsafe condition on these products. The MCAI states:

An occurrence was reported of an HPT stage 1 disc burst on an industrial gas turbine engine. Subsequent investigation revealed a quality escape during HPT stage 1 disc rim cooling air hole manufacturing process. A review revealed that 28 HPT stage 1 discs were subject to a similar quality escape, two of which have been recovered and removed from service. The consequence of this manufacturing error is that the affected parts can no longer safely reach their Declared Safe Cyclic Life (DSCL).

This condition, if not corrected, may lead to failure of an affected part, possibly resulting in release of high-energy debris, with consequent damage to, and/or reduced control of, the aeroplane.

To address this potentially unsafe condition, RRD issued the NMSB, providing instructions to remove the engine from service for in-shop replacement of the affected part.

For the reasons described above, this [EASA] AD reduces the DSCL for the affected parts, requires identification of the affected parts and removal from service of each affected engine for replacement of the affected part. This [EASA] AD also prohibits (re)installation of affected parts.

You may obtain further information by examining the MCAI in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1174.

FAA's Determination

This product has been approved by EASA and is approved for operation in the United States. Pursuant to our bilateral agreement with the European Community, EASA has notified us of the unsafe condition described in the MCAI and service information referenced above. The FAA is issuing this NPRM because the agency evaluated all the relevant information provided by EASA and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Related Service Information under 1 CFR Part 51

The FAA reviewed RRD Alert Non-Modification Service Bulletin (NMSB) SB-BR700-72-A900659, Revision 1, dated November 5, 2019 (the NMSB). The NMSB provides the part numbers and serial numbers for affected HPT disks, the serial numbers for all engines with an affected HPT disk installed, and instructions for replacement of the affected HPT disk. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the

means identified in ADDRESSES.

Proposed AD Requirements in this NPRM

This proposed AD would require replacement of the affected HPT disk before reaching specified compliance times or at the next engine shop visit, whichever occurs first.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 21 engines installed on airplanes of U.S. registry.

The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Replace HPT disk	20 work-hours x \$85 per hour = \$1,700	\$550,000	\$551,700	\$11,585,700

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, all of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected operators.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

Rolls-Royce Deutschland Ltd & Co KG (Type Certificate previously held by Rolls-Royce Deutschland GmbH, formerly BMW Rolls-Royce GmbH): Docket No. FAA-2020-1174; Project Identifier MCAI-2019-00135-E.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Rolls-Royce Deutschland Ltd & Co KG (RRD) (Type Certificate previously held by Rolls-Royce Deutschland GmbH, formerly BMW Rolls-Royce GmbH) BR700-710A1-10, BR700-710A2-20 and BR700-710C4-11 model turbofan engines with a high-pressure turbine (HPT) stage 1 disk having a part number and serial number listed in Planning Information, paragraph 1.A., of RRD Alert Non-Modification Service Bulletin (NMSB) SB-BR700-72-A900659, Revision 1, dated November 5, 2019, installed.

(d) Subject

Joint Aircraft System Component (JASC) Code 7230, Turbine Engine Compressor Section.

(e) Unsafe Condition

This AD was prompted by an investigation by RRD, which revealed a quality escape during the HPT stage 1 disk rim cooling air hole manufacturing process. The FAA is issuing this AD to prevent failure of the HPT stage 1 disk. The unsafe condition, if not addressed, could result in the release of high-energy debris, damage to the airplane, and reduced control of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

Before the affected HPT stage 1 disk exceeds 2,840 flight cycles (FCs) since new, or within 60 days after the effective date of this AD, whichever occurs later, but not to exceed 8 years after the effective date of this AD if using FCs, remove the affected HPT stage 1 disk from service and replace with a part eligible for installation. Guidance on replacing the HPT stage 1 disk can be found in the Accomplishment Instructions, paragraph 3.B., of RRD Non-Modification Service Bulletin (NMSB) SB-BR700-72-A900659, Revision 1, dated November 5, 2019.

(h) Installation Prohibition

After the effective date of this AD, do not install any affected HPT stage 1 disk onto any engine.

(i) Definition

(1) For the purpose of this AD, a “part eligible for installation” is an HPT stage 1 disk that is not listed in paragraph 1.A. of RRD NMSB SB-BR700-72-A900659, Revision 1, dated November 5, 2019.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in Related Information. You may email your request to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Related Information

(1) For more information about this AD, contact Wego Wang, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7134; fax: (781) 238-7199; email: wego.wang@faa.gov.

(2) Refer to European Union Aviation Safety Agency (EASA) AD 2019-0299, dated December 10, 2019, for more information. You may examine the EASA AD in the AD docket at <https://www.regulations.gov> by searching for and locating it in Docket No. FAA-2020-1174.

(3) For service information identified in this AD, contact Rolls-Royce Deutschland Ltd & Co KG, Eschenweg 11, Dahlewitz, 15827, Germany; phone: +49 0 33 7086 1200; email: rrd.techhelp@rolls-royce.com. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759.

Issued on January 8, 2021.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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